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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,248	11/28/2003	Richard Phillips		1635

7590

10/26/2006

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EXAMINER

SMITH, NICHOLAS A

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,248

Applicant(s)

PHILLIPS ET AL.

Examiner

Nicholas A. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 11-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/2/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 1-10 remain for examination.
2. Examiner notes that there is use of trademarks in claim 3. Please see MPEP 2173.05(u).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allroth et al. (US Patent 6,537,489) in view of Ozaki et al. (US Patent 6,235,076).
5. Allroth et al. in view of Ozaki et al. is applied to the claims for the same reasons as stated in paragraph 3 of the previous office action.

Response to Arguments

6. Applicant's arguments filed 8/1/2006 have been fully considered but they are not persuasive.
7. Applicant argues:
 - a. No "liquid phase former" is mentioned specifically in the prior art.
 - b. No "sintering to effect a liquid phase sintering of said liquid phase former with said particles of metal powder" is mentioned specifically in the prior art.

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- c. Ozaki et al. states that the lubricant "is a fatty acid amide and/or a metal soap" (col. 4, lines 41 to 42).
 - d. Allroth et al. does not specifically teach that compression of a mixture is at a pressure sufficient to liquefy and uniformly distribute the lubricant within the compressed mixture as well as have the lubricant effect a uniform distribution of said liquid phase former on said particles of metal powder.
 - e. Allroth et al. does not teach claimed compaction pressure.
8. Examiner responds:
- a. While the term "liquid phase former" is not specifically disclosed in Allroth et al., additives and alloying elements such as graphite, phosphorous and nickel are disclosed (col. 2, lines 41-45, 60-64). In the instant specification and instant claims, these constituents are disclosed as "liquid phase formers" (claim 4 and specification, p. 3, lines 4-8).
 - b. Since prior art discloses same materials used in the process (lubricant, liquid phase former, metal particles), same process steps (mixing, compaction/compression, and sintering) with same processing conditions (temperature, etc.), one of ordinary skill in the art would expect the same effect to occur, that being "to effect a liquid phase sintering of said liquid phase former with said particles of metal powder."
 - c. Ozaki et al. discloses a fatty acid, lauric acid, as a lubricant (col. 5, lines 3-4 and col. 6, lines 4-8).

d. Allroth et al. teaches compression of a mixture is at a pressure sufficient to liquefy and uniformly distribute the lubricant with the compressed mixture (col. 5, lines 17-25). While Allroth et al. does not specifically teach this process in regards to effecting a uniform distribution of liquid phase former on particles of metal powder, one of ordinary skill in the art would realize that such a description of the compression process would naturally include embodiments where liquid phase formers (see explanation for (a) above) are included in the mixture in the compression step. A uniform distribution of liquid phase formers is a common function of lubricants, as lubricants are used to prevent segregation in powder mixtures (Ozaki et al., col. 4, lines 42-44).

e. Allroth et al. teaches that while there is no straight equivalence exists between ram speed and conventional compaction pressure, one of ordinary skill in the art can through routine experimentation determine the proper compaction or compression conditions and thus these processing conditions are an optimizable. See MPEP 2144.05.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS


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